

I sent my comments on this document to Karen, but here's Anke's response which I find utterly amazing. I've only read it once, but I think she has a number of observations in this that are outside the box (esp. the BDCP box) but frighteningly on target. Even without reading the doc that prompted them I think they are worth your attention.

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----- Forwarded message -----

From: "Mueller-Solger, Anke@DeltaCouncil"

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Date: Mon, 30 Jan 2012 16:29:26 -0800

Subject: RE: Reconciled Delta draft report...at last!

To: "tsommer@water.ca.gov" <tsommer@water.ca.gov>, Bruce Herbold

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Ex. 6 - Personal Privacy

Ellen, Jay, et al, below and attached are my comments & edits. Very sorry for the delay. I really didn't think it would take me this long. I also didn't think my response would get this long. Thanks in advance for your patience.

Overall, I think this document could make a really good contribution and elevate the current Delta debates in at least three very important ways: It could 1) provide a new framework for thinking about the Delta and for managing it (ecosystem reconciliation & perhaps ecosystem services); 2) provide a comprehensive and fresh "reconciled" vision for the Delta of the future; and 3) educate, e.g. about why biodiversity is worth preserving.

We really need all three things badly. Unfortunately, I think this document falls short in all three areas. In its current shape, I think it's a bit of a lost opportunity. I fear that for some things, it might even make matters worse by pouring more fuel on some already bright, destructive, divisive & not at all reconciliatory fires instead of "civilizing" the conversation and reconciling human & ecosystem goals. See especially my bullet points 1 & 2, below, for this, but some of the others, too. For this reason & for the reasons stated by Bruce & Ted, below, I do not currently want to be on the author list.

Interestingly, my overall impression is almost the opposite of Chris's (although I agree with a lot of his comments): I liked the second half of the report (starting with "A Vision of a Reconciled Delta Ecosystem") better than the first half.

What follows are my main comments including some new "shaping" (untangling) ideas. More comments & edit suggestions are in the attached.

1. Pouring fuel on the ESA fire: I feel that in the first parts of the report, there is some really funky undercurrent of "we have to do this ecosystem stuff because of some laws called ESA & CWA which supposedly "require sudden, sometimes drastic, cutbacks in water service" (define drastic?), otherwise we wouldn't because it's really "economically irresponsible, politically naïve, and morally wrong" because of the "myriad interests" in CA that all need and deserve more & more & more... water from the Delta. This is a) wrong, imo, and b) a lost opportunity to educate folks why we might REALLY want to take care of the ecosystem and preserve biodiversity. We really need this kind of education! Lots of folks, including influential ones, really don't get it, esp re biodiversity. Also, I feel that the way the ESA is used here contributes to turning judges into lead scientists. This is not helpful.

Some examples of where, to me, this undercurrent surfaces:

- "when drought and regulatory mandates converge to prevent the Central Valley Project (CVP), State Water Project (SWP), and other agencies from fulfilling their water service obligations." - define "obligations." Obligations for "paper water," perhaps?

- "...water supply reliability depends on a functional and sustainable ecosystem . Californians do not have the luxury of enduring even one more decade lurching between water shortages and endangered species crises." - define "reliability." Also: depends how? Depends because of the ESA/endangered species (which is what this sounds like)? Or depends because of something more fundamental? Like eg the plentiful historical evidence that unsustainable resource use and ecosystem destruction can lead to the collapse of entire civilizations? (But hey, let's not worry about what happened yesterday, let's go invent tomorrow... because the eminent ecologist Steve Jobs said so?)

- "Urban and agricultural water exports from the south Delta pumps are becoming less reliable as endangered species concerns disrupt pumping schedules" - it's the species & that darn ESA then, not our Mediterranean climate & droughts & putting massive numbers of people and giant & intensive farming operations into a "semi-desert with a desert heart" & such?...

- "These declines have persisted despite decades of well-intentioned efforts to improve conditions for native species in the Delta and are likely to continue despite the positive effects of favorable environmental conditions in recent years. This environmental management failure has escalated conflicts in the Delta. " Really? What efforts exactly? And what favorable conditions? And so the real

problem is "well-intentioned environmental management" that just didn't work, not pumping & dumping, diking and damming? Or did you mean for "environmental management" to include pumping & dumping, diking and damming? If yes, please clarify.

2. Biodiversity education: the text makes it overall sound quite a bit like the ESA is the only reason why we might want to protect native biodiversity (or why not). I strongly feel that it also needs to state ecological and perhaps also cultural reasons - in fact, this should be the core argument, NOT the ESA. There are really good reasons to protect biodiversity, here and elsewhere. I'm attaching two papers that might be helpful & could be cited, but there are of course many, many others. Why not make this a center piece of this report (balanced with ecosystem arguments)? Many people really don't understand the importance of preserving biodiversity - eg DSC member Hank Nordhoff. This report is an important chance to educate them. And you are in a great position to do this: you already have an audience who expects it from you & pays attention to you.

3. New framework(s)/thinking:

· Reconciliation ecology - Reconciliation ecology is used as the hook & supposed frame for this text, but I feel it's so far really very underdeveloped. Beyond sounding "nice," it remains very vague. In some places it even sounds a bit like "reconciliation is never having to say I'm sorry." I think that's because it does NOT (yet) clearly state a RECONCILED vision and reconciliation goals & does not provide clear trade-offs. To add something new/be really worthwhile, reconciliation must do more than "sound nice" and it must also be more comprehensive. The current "Vision of a Reconciled Delta Ecosystem" is really a vision for a physically feasible "fish-friendly Delta" - not much in the way of "reconciliation" other than reconciliation of fish habitat with physical constraints (mainly elevation and to a lesser, pretty vague degree (except for the tidal energy bit) with hydrology/pumping). Nor is it really about ecosystem - it's first & foremost about fish. But reconciliation ecology involves humans and other species that share an ecosystem, not just one group of species (fish) and one ecosystem service such as water supply (for people far away). For the Delta, in my mind, this needs to START with humans and other species that directly use and live in the Delta, that are part of the Delta ecosystem proper. The main idea behind reconciliation ecology is to preserve biodiversity & ecosystem functions in places inhabited, used, and often utterly transformed by people instead of setting aside no-people nature reserves and restoring them back to some "wild" state. I'm not really against a fish focus, but I think it needs to be more balanced with needs of other species and people. Trade-offs need to be very clearly stated.

· Delta people - They and their concerns & needs are mentioned more in passing than seriously considered. Some of these folks are really becoming increasingly belligerent, mostly re the BDCP. You may think that that's oK and/or doesn't matter much because a bunch of these folks live and farm on a "sinking ship" and overall, they don't contribute as much to CA's economy as some bigger farmers farther

south. But I think that if you really want to contribute to reconciliation & civilizing the discussion, it's time to give them more - and perhaps more creative - consideration and options. They do after all live in the place we are talking about. No need to pour more fuel on their already growing fires. And besides, is living & farming in a subtidal, levee-ringed hole really so much more crazy than farming trees in a desert or lettuce in selenium laden soils with water that's pumped in from hundreds of miles away, at great cost not just to the water recipients, but to society and the environment?

· "Ecosystem services" - This term is mentioned in the very beginning & very end of the text, but as concept it isn't developed at all or even ever mentioned in the body of the text. I think it could be a very useful concept & framework here, along with ecosystem reconciliation - the two are related. If you are after something like a "greatest reconciled value" vision, I don't really see a way around it because I don't know how else you'd really get at the "value" part in a somewhat fair way. I know, of course, that the ES concept also has limits - see eg Dick Norgaard's "complexity blinders" paper. But at least to me it's something we really should explore much more for the Delta. I'm attaching a Science article about a recent ES assessment for the UK they I quite liked (the synthesis report is at <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>). Something like this is what I'd like to see for the Delta (or estuary, or CV, or CA....). Of course you won't have time to do a real ES analysis in this report. But you could still talk about it/educate and if you think it might be fruitful, you could even take this up more fully in your next book. OR delete the words in the beginning & end of the report. Because right now they are nothing more than (jargony) words.

4. New vision: Regarding the vision that's laid out in the report, I already pointed out that I think it's really more a vision for a physically feasible "fish-friendly Delta" than a vision for a reconciled ecosystem. I actually like it quite a bit as such, specialized "arcs" & all. But even as that, I find it a bit unsatisfying - the way it reads right now is really not so different from what's in the latest ERP conservation strategy & the Delta plan and I don't think this really provides much new or greater reconciled value the way I'd understand it. I also think it could be better connected to the scenarios described in your earlier books. It's quite logical that you would now provide one particular vision - a "greatest reconciled value" vision. But from the text, it's just not all that clear that this is what it is, and you should then probably also refer back to your futures books to explain your thinking & the evolution of this particular vision.

For my part, I've been thinking about taking the areas of specialization idea a step further and more thoroughly "untangling" the conflicting uses of the Delta while also not just abandoning the central Delta, as follows. No idea if others have also proposed this sort of thing somewhere else. I bet at least some of this has come up before because pretty much every engineering scheme imaginable has, but I haven't heard/seen it in this particular form (maybe because it's totally not doable/too crazy?). See also attached maps. A title for his might be: "Where the Wild Things Are and Aren't: Untangling

and Reconciling the Sacramento-San Joaquin Delta."

- Get rid of dual conveyance/south Delta water intake: if there were a northern intake/PC/tunnel, what good would a continued south Delta intake really do? I.e. what good is dual conveyance, really? The south-Delta intake was never ever fish-friendly, nor has it ever been a good idea to take drinking water out of a peat swamp. It could be seriously affected by Quagga/zebra mussels. I've also seen some interesting projections of what an earthquake on the Hayward fault as far away as San Pablo Bay might do to this area (spreading via Livermore). If things are supposed to improve for fish & water supply, why have the south Delta intake at all? You (& others/BDCP) say that it's for "flexibility." But what flexibility exactly, and why is this really needed if you carefully plan & manage the northern intake along with south of Delta storage (esp groundwater)? I'd do away with the southern intake, or reduce it to a much smaller "emergency only" facility.

- Establish a northern water intake: This of course also raises big concerns for fish entrainment, esp for salmon & with climate change (which may push salinity & delta smelt upstream). But if very carefully planned, managed & regulated, I think it could be more fish & ecosystem-friendly. I've been thinking about a bit more of a radical engineering/shaping scheme. In this scheme, fish habitat and migration corridors would be more substantially "untangled" from water conveyance & pumping. Greater pollution control would also need to be part of the equation to help maintain good Delta water quality. To do this:

- Establish SEPARATE (aka specialized) northern fish and water routes: make the north Delta/YB habitat "arc" into the main/only fish migration corridor (= a new mainstem Sac, from a fish perspective) and turn the mainstem Sac into something of a very long forebay that excludes migratory fish via (massive) fish screens at the upstream end - just downstream of the Feather River/Fremont weir - and the downstream end at the Sac/Cache Slough confluence. This "fish route" would need a bigger channel, eg a much bigger toedrain or a lengthened Sac ship channel, or a combination of both (eg with a big gate above the port that could be closed to avoid rapid sediment deposition into the ship channel during floods), preferably with some meanders & good connectivity to the YB floodplain. The American River would be cut off & eliminated as salmon spawning habitat. I think this would be a very deplorable cultural & educational loss, but not such a big loss for salmon, esp as temperatures get warmer with climate change. It could be saved if the northern screens were placed below the American River & the American R fish went through the Sac Bypass or even thru the old locks to the port of Sac, but this seems more problematic to me because of the very built up urban surroundings below the American River & the way the river curves and the need to get most fish thru the YB route, not the mainstem sac route, which requires a clear divide at the head of the YB where the Feather river comes in. Steamboat, Sutter, and Elk Slough would need to lose their connection to the mainstem Sac & instead be connected to the Sac ship channel/Cache complex (they already are to some degree). The upper end of Georgiana Slough would need to be connected to the Mokelumne. The mainstem Sac River fish screens would likely be a pretty gigantic

(insurmountable???) engineering problem. The western ones would have to handle strong tides - but happily, the greatest tidal energy actually already goes straight into Cache slough/the ship channel. The northern ones would have to handle occasional strong flood flows with lots of sediments & debris - but the idea is to get most of this straight into the unobstructed YB floodplain & fish route where it's all needed for habitat. If flows are well directed, much less should go toward the fish screens. Of course the screens would need boat locks. The Delta cross channel would become permanently closed (except possibly for emergencies when a quick freshwater source is needed in the Delta). Water from Sac Regional would go to SoCal. Sac water would only get into the central Delta via three-mile slough & through (see below) and around Sherman with the tides. The central Delta would rely more on eastern trib & SJ flows, and the southern Delta would rely mostly on these. None of the water that reaches the central Delta would be exported to SoCal, but it would be used in the Delta (& Contra Costa WD). Greater pollution control (including a more serious upgrade of the Stockton WWTP), "clean" reservoir releases, and careful Sac flow regulation are all needed to not mess up Delta water quality. Salinity intrusion may, however, be greater in dry years, esp with sea level rise. This would be a greater problem for farmers & Contra Costa (they need another intake) than for fish (which would now have better habitat in the northern arc & in the southern one as well (no more entrainment)), and they'd have to somehow be accommodated (see my central Delta ideas for farmers). One or more "shunts" (as envisioned in the 1970s) could infuse Sac water from the PC into the central and southern Delta to improve water quality, but I'm more in favor of more radically detangling all the river flows in the central Delta "mix master" and instead work more on pollution control. This would give salmon etc migrating through the Delta a better chance to actually find their way - rivers might become recognizable again. And it would also force us away from the usual solution to pollution, dilution.

- Establish Sherman Bay = flood Sherman Island (plus maybe Twitchell). This island is particularly hard to maintain. Flooding it & removing a lot of its levees would produce some shallow(ish) water habitat that might provide some of the same ecosystem functions and habitat as the current Sherman Lake and Honker & Suisun Bays. Having more of this farther upstream may be particularly important if salinity intrudes farther upstream with sea level rise and possibly exports thru the PC. This would obviously dampen tidal energy into the upstream areas. Not sure if that's good or bad. I'm also not really sure what this would do to salinity/X2 dynamics. But my idea is to have more higher-quality (non-channel) low salinity habitat available upstream if salinity intrusion increases. Would likely have more Stuckenia beds, less Egeria. Probably pretty productive. Big fresh or low salinity staging zone. More Corbicula than Corbula.

- Do something better with the deeply subsided Central Delta islands west of the SJ ship channel, not just condemn them to becoming a big bad bass blob: I think this area could use a lot more creative thought as to how to make this better for both fish & people and for some other species, too. Right now it seems more like a shoulder-shrugging "here be big bad bass" thing. But I can imagine other ways that would perhaps offer more reconciliation potential. For

example, one could maintain quite a number of levees to not put big bass blobs into native fish migration routes. These levees would NOT be for the freshwater "straw" going to the south Delta pumps because I'd do away with the pumps - although this straw could perhaps be maintained for emergencies. People could eg farm islands as long as levees are maintained. But after a levee breaches accidentally (earthquake etc), the island wouldn't be pumped out. The levee might be fixed, but the island would remain flooded and used as an enclosed non-native freshwater fish habitat/aquaculture operation with less of a danger to migrating fishes and a way to keep saltwater out for a while during dry periods, maybe also functioning as freshwater reservoirs a la "Delta wetlands." This could of course also be done on purpose. Either way, agriculturists would become bass etc aquaculturists, with ownership of their lake & ways to profit. Some of the island lakes west of the SJ ship channel could also be combined and connected into an attractive (to anglers) "lakes region" network taking care not to disrupt migration corridors along the Mokelumne/Cosumnes, SJ/Calaveras, and perhaps Middle or Old river (but I could imagine eliminating them as migration routes). Again, pollution control is needed to make these bass etc safe to eat (not sure what to do about Hg). With shallow flooding, islands could also be used as tule or rice farms which would help sequester carbon for carbon credits (=profit) & (very slowly) rebuild peat soils & also provide bird habitat (but might cause MeHg trouble). This would require long-term levee maintenance (perhaps made more difficult/costly by both sides being wet, or would this make it easier?), but if a few islands were combined, there might be fewer levee miles. The peat building should happen on the somewhat less subsided islands. I could imagine "island lake" & "island wetland" regions depending on elevation. These regions could be internally connected, but fairly disconnected from each other & from the surrounding channels, esp the fish migration corridor channels. Danger: earthquakes etc - shallow wetlands get swamped & non-native habitat/species mix with the species in the migration corridors. But the "real" lake species would be less happy in the deep channels & after levees are fixed, species should eventually get more separated again.... & the wetlands -well, they might be lost. That's why they should be in the less subsided places in the first place. Also problematic: aquatic weeds & Microcystis & maybe quagga/zebra. Nutrient reduction might help a little, but possibly not all that much. Letting at least some islands get salty sometimes might help (but FW fish wouldn't agree). Maybe the weeds can be harvested for biofuel production? (I guess I better stop.)

5. And finally a much more minor point, but I want to make it anyway: The term "domesticated" for the current state of the Delta, as opposed to the pre-European state, may not be such a good one after all. Not sure who suggested it - could have been me because I've been quite influenced by Kareiva et al in Science 2007. But I've recently been immersing myself in CA history books (boy, that John Sutter sure was an interesting fellow!) & now think that this gives a bit of a wrong impression of the system ~ before & after Sutter showed up/Statehood. Native Californians actively "domesticated" the system before Sutter, too - just differently. One of their main tools was fire which they used to keep landscapes open & biologically

rejuvenated & productive. I.e., they promoted & managed disturbance. Their less sedentary life style was also well adapted to other forms of disturbance & natural cycles, eg floods & droughts and seasonal cycles. To them, the pre-Sutter central valley really was quite "domesticated" - they managed it & they managed their own life style in a way that let them survive for millennia in this difficult (for Europeans) climate & landscape. In contrast, Sutter et al tried farming & ranching in the European way. Not surprisingly, Sutter's first plant crops all failed which contributed quite a bit to California's first debt crisis (Sutter's that is, to Russians no less) - California & "New Helvetia" just weren't and still aren't Switzerland/Germany. Things got better for Sutter when he figured out irrigation - he started the CA water projects, along with the loan-based way for funding them... He (actually his son) paid his loans off by selling flood-prone real-estate to gold rush crazed newcomers - another long-surviving trend, gold or no gold. Anyway, the point is that I don't like "domesticated" anymore.

I'll stop now. For more specific comments see attached text.

Anke

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Views expressed in this e-mail are my own and do not necessarily represent the views of the Interagency Ecological Program or the Delta Stewardship Council.

From: Sommer, Ted [<mailto:tsommer@water.ca.gov>]
Sent: Thursday, January 19, 2012 3:29 PM
To: Bruce Herbold; Ellen Hanak
Cc: Enright, Chris@DeltaCouncil; Mueller-Solger, Anke@DeltaCouncil; Lenny F Grimaldo; Mike Chotkowski (Michael_Chotkowski@fws.gov); jrbureau@usgs.gov; John Durand; William Bennett (gmail); wefleenor@ucdavis.edu; asih@ucdavis.edu; Buzz Thompson; Jay Lund DAVIS; pbmoyle@ucdavis.edu; jfmount@ucdavis.edu; Brian E. Gray
Subject: RE: Reconciled Delta draft report...at last!

Colleagues,

See below for my batch of challenging comments. My major comments are resolvable, especially if some text could be added to clarify some of my key points.

Cheers,

Ted

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General

1. Overall this is a well-written document with some provocative ideas worthy of debate.
2. Authorship: Like Bruce, I didn't feel that I contributed enough to warrant authorship. An added issue is that some of the content is likely to be pretty controversial, so my opinion is that it would be better to leave the agencies off as authors. This is particularly true for those of us who work for IEP, which tries to stay firmly in the science side of things & avoid making management recommendations. There are enough IEP people that participated for some to try and make the connection. Putting in a disclaimer in the report will not fix the issue since it is still the individuals that will get the attention. Besides, the main points in the report don't really need our authorships to generate debate and attention. I am OK to be included in the acknowledgements, though.
3. The reconciliation seems a bit uneven. Despite the fact that the content of the report is consistent with my priorities, the Management Tools all seem to require OTHERS to sacrifice. As written, in this section the diverters, landowners, and dischargers all seem to take a big hit, but I don't see the environment giving much at all (anything?). I worry that it will seem too one-sided to be seriously considered as reconciliation. Perhaps we need to add something bold. For example, do we want to acknowledge that delta smelt is unlikely to survive the next century, so perhaps we should eventually scale back some of the protections for that fish? I know this is heresy, but it is more consistent with some of the background text that raises doubts about the future of smelt.
4. A natural flow regime? As written, the flow proposal under Management Tools (P. 34-35) seems inconsistent with the call for more natural flow regime. More flow in spring is indeed more consistent with historical conditions, but the call for more summer and fall flows may not be. Indeed, it seems to me to be managing the Delta as even more of a freshwater lake than in currently is. Perhaps this is simply supposed to be for the "good years", but the text isn't clear about that. If so, more text is needed to explain how the drier years would work. That might partially satisfy my desire in the previous comment to show some sacrifice on the environmental side.
5. Coast hatchery: For reasons that I cannot fully explain, this idea caused me more trouble than anything else in the document. I am really worried about the logistics and potential impacts of the proposal. There are some big engineering issues, like where in the coast would be able to find a whole lot of fresh water and a location to put pens? The most likely area is the north coast, but I am leery of exposing those "cleaner" tributaries to zillions of hatchery fish. The history of Chinook salmon tells us that hatchery fish will find a way to colonize those rivers too & probably expose them to a variety of new diseases. I don't think that it is realistic to expect us to be able to harvest all of the coastal hatchery returns--the escapees will end up in places that we probably don't want them. To me, the risks are too high. At the very least, consider referring to this as an idea worth of consideration and debate, not a formal proposal (as

written).

A related comment is that this approach seems a bit inconsistent with the reconciliation idea. In other parts of the document we accept the idea that some of the aliens are here to stay. However, the message in this section is that "hatchery fish must go"...even though they have clearly already established themselves, much like many alien species.

I admit that I don't have a good alternative. But if we really want to make an impact, why not do something even bolder and perhaps less risky? For example, completely close down the hatcheries and the commercial fisheries. The rivers should still be able to produce enough to support lucrative sport fisheries, especially without competition from the commercial boats. To satisfy the public's demand for salmon, we would then need to provide a source of fish, likely through salmon aquaculture. The cultured fish could be aggressively bred to limit their ability to survive if they escaped cages, and perhaps to survive the coming warming of the oceans. Honestly, I am not pushing this suggestion...just putting something else out for the purposes of discussion.

6. Adaptive management. The section on data and analytical work seems pretty thin and focused mostly on physical data.
Specific Comments

Table 1

Fisheries Management Actions: Fish screens seem like an awkward fit here. It makes it seem like fish screens are stressors, but the text identifies them as mitigation. This will only confuse people. I recommend deleting this bullet.

Table 2. Nutrients seem like the wrong category. The text in this box doesn't really describe nutrients, but general factors limiting primary productivity. I recommend deleting this category, since the stressors in the text box are already listed in the other categories.

P. 19, Point 5. Using the term "death traps" is a bad idea. We don't really need language this colorful to get the point across. We should just say something like: "The Central and South Delta are considered major sources of mortality for delta smelt and juvenile...."

P. 21, Para. 3, First Sentence. Replace "high" with "good".

Table 3. Add Freshwater to Adult Delta Smelt box.

P. 25, Para. 1. Skip the part about X2, since Bruce believes that its usefulness may be waning. "Low salinity zone" would be a good replacement.

P. 26. Deep water lakes. I think that this header should be renamed to "Flooded Islands". Liberty Island is definitely not a deep water lake and is an important contrast to flooded islands that are.

P. 26, Last Para. Insert "red" before "swamp crayfish".

P. 29, Line 1. How would we "manage" Big Break and western Sherman Island? They are already flooded, so what could realistically be done?

Page 34, Para. 2. Rather than saying "Thus, we propose", consider a less assertive opening like: "One option would be to...." I worry about making proposals when the idea is still at the stage of a concept for discussion that has not yet been aired among outside groups.

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To: Ellen Hanak
Cc: Enright, Chris@DeltaCouncil (Chris.Enright@deltacouncil.ca.gov); Mueller-Solger, Anke@DeltaCouncil (anke.mueller-solger@deltacouncil.ca.gov); Lenny F Grimaldo; Mike Chotkowski (Michael_Chotkowski@fws.gov); jrbureau@usgs.gov; John Durand; William Bennett (gmail); William Fleenor; Sommer, Ted; asih@ucdavis.edu; Buzz Thompson; Jay Lund DAVIS; Peter Moyle; Jeff Mount; Brian E. Gray
Subject: Re: Reconciled Delta draft report...at last!

Careful what you wish for. I have comments ranging from very large in my mind to levels of triviality that Peter has come to expect from me ("Lilaeopsis is misspelled") I hope you find them useful. For easier reading I have also attached the original Word version.

Where the Wild things aren't - comments from Bruce Herbold
As far as authorship goes, I think I will opt for the acknowledgments because I see only a few of my fingerprints on the document. My alternating years idea has now been heard by a number of people who find it attractive so I am glad it is appearing here. I was sad to see that my role as Cassandra did not survive the editor's pen - I do believe that it had served two roles here:

1. we are not proposing to cause a lot of the problems that we describe. Preparing for the inevitable is a part of planning that gets shoved aside in the political scramble to 'do good.' And no politician or manager wishes to be the bearer of bad news - that role is one that these PPIC documents have done importantly in the past and I had hoped that this would more actively push that perspective into the planning discussion. As has already come up in some of the press surrounding the other PPIC doc that just came out, the foreteller of doom ends up getting blamed for doom. Clarity that 'it's not our fault' could be greater than it is in the current document, but we also have the least to lose in delivering this news - as I have said before, none of us wants our medical doctor to sugar-coat the bad news;

we ecological doctors should be no less forthright .

2. We can actually do some of the planning that the inevitable entails. In particular the recent report from DWR on where Quagga/zebra mussels are likely to thrive shows that the Sac is not hospitable but everything south of Franks Tract likely is. That means something for a dual conveyance, since the fish screens in the south delta already don't do much. But ignore the ecosystem, remember the pictures of bulldozers clearing out Corbicula from the SWP aqueduct? I expect worse pictures in the future. Exports out of the south delta seem like a losing proposition for everyone, even more in the near future. They also imply important things about what we should plan for in the habitats for the different areas - a floodplain approach for the south delta may be a significant way to reduce the impact of quagga - they can't withstand 9 months of drying so the floodplains should still function as we hope they will, whereas marsh and other perennially aquatic habitats are likely to suffer greatly. To a large extent dreissenid mussels are more predictable than climate change and will exert their impact a lot sooner. We err in not including them here.

I am most concerned that this document opens a door enough to draw people to the idea of reconciliation ecology and adaptive management but fails to address the greatest danger posed by such an approach. Without clearly identifying goals and targets - or at least identifying the need for such goals and targets - this invites people to simply do the best they can and we know that won't be enough. I eagerly started reading the section on "Goals of a Reconciled Delta" which starts with "recognizing the limits," touches briefly on "achieving the most difficult goal for the delta" and concludes with the importance of being "realistic" and aware that some species may become extinct "despite heroic measures." Well, that hardly could be described as a clarion call to action, so I went on the "Management Objectives" which is a list of 7 non-objectionable objectives with no linkage to the preceding Goals and with no suggestion of how to tell how much to target, how to prioritize or how to tell if they're working - i.e. performance measures. Perhaps some integration with Sam Luoma's UMARP would be useful here. Of course the final action "to suppress harmful invasive species," to my mind misses the mark on planning to accommodate the inevitable. My overall sense of the document is that in trying to be realistic and balanced and 30,000 foot view-oriented, we have developed something that fails to actually make the case for what the delta could be, the reconciliation comes off as a 'best we can do' approach rather than a 'let's make lemonade' approach.

Minor comments (sorry my page numbers are bollixed so I am resorting to direct quotes, but they are in sequence anyway)
"the CWA and ESA... would continue to require sudden, sometimes drastic cutbacks in water service" Who drank the Kool-Aid for this sentence? Reviews of the recent drought showed tha ESA (I can't even guess how CWA fits into the sentence) contributed about 10% to the decline in exports. CVPIA dedicated 800 TAF of CVP yield in 1992 but there has been no change in CVP exports since then - slow and steady

as always. The 94 Accord dedicated 1 MAF to environmental protection and yet exports went UP by 1 MAF. Come on guys, this really sounds like something from a Fresno courtroom more than something from UCD professors.

"favorable environmental conditions in recent years" Yars, plural? We got lucky in 2011, 2012 isn't looking good and nothing since 1999 has been too attractive.

"despite heroic efforts" - this phrase is used repeatedly in the document in regard to environmental protection and I find it disturbing. The phrase is married in my mind to the "do not resuscitate" clause in health care suggesting that resuscitation should not be performed. I don't think that's a good analogy for the delta. I also do not believe that any heroic actions have been performed - I've been involved in a lot of them and they've been harshly negotiated compromises that give the environment little and have not actually had much impact on water ops - see comment above. Certainly nothing I have been involved with could be described as 'heroic.'

mason's *lilaeopsis* is misspelled

In the Hierarchy of species it is unclear where desirable non-natives would go. 1 is native species and 2 are alien species that are important sources of food for native species, 3 are non-natives that use habitats not used by natives and 4 are pests. Rewrite for clarity.

"Create more a more natural environmental flow regime" Oops a oops ...

"confusing flow patterns pull these fish..." Is it confusion (i.e. active movement on the organisms part) or pulling (particle tracking sorts of actions) I think it is worth pointing out the different mechanisms by which fish are diverted from their migratory corridors as it affects what you need to do to straighten them out.

"high water quality... and other characteristics that are generally inhospitable to alien species," I think I know what you mean but I don't think we want to advocate for poor water quality.

Table 3, the asterisk is missing on white catfish.

More significantly, I think we are missing the boat on predicting the inhabitants of flooded islands. I would trust PM's imagination more than mine, but I think some serious thought should be given to what the large flooded islands might contain. I picture centrarchids around the edge,, but in the open water in the middle I imagine something more like Clear Lake if the island is minimally breached - i.e. silversides swirling in masses and channel catfish prowling. If it's more breached but too deep for SAV then I imagine something more striped bass friendly. In some areas, islands with few breaches might get topped over with Hyacinth. In the south delta quagga will have impacts on clarity and productivity. Water quality, like fish communities, will depend on depth and degree of connectedness, and surrounding land patterns. This is a great opportunity to demonstrate what Reconciliation ecology is about. What do we expect? What would promote what we want? How should we respond, and what should we respond to as the future actually occurs?

Throughout the document X2 is misused - it is the location of the low salinity zone, not the low salinity zone itself. Thus "X2... moves upstream" makes no sense. The LSZ moves upstream and X2 indexes that position. Please.

"Hardened channels" this discussion focuses on SAV but where currents are low and/or depths are high, it's the floating weeds that will dominate. Even elsewhere, I have been led to believe that deep

islands, where we've lowered the elevation down to mineral soils and compacted them with years of bulldozer activity, are likely to be very slow to fragment. Thus, they may not contribute much to the sediment balance and they may resist invasion by SAV. This may give an edge to Microcystis or Hyacinth or sponge plant.

In discussing "A reconciled delta" reference is made to "the desired ecosystem." I find this misleading - we are actually promoting the management of several different ecosystems. I imagine one could describe them all as component communities of a single ecosystem, but I think that loses impact. We will manage the centrarchid bass ponds very differently than the floodplains, and we will manage in the presence of quagga very differently than in Yolo Bypass and the northern Delta. Each will be different and each will require different goals and actions. This is highlighted in the discussion of Eastside Rivers here 5 specialized management targets are identified. "summer temperatures are often close to the upper limits that smelt can tolerate for spawning" Probably a good thing that they don't spawn in the summertime, eh? The cold water pool issue could be used to bring in the need for greater carryover storage and how flood control could shift to other strategies, like enlarged floodplains that would allow this. Targetting maximal carryover rather than maximum exports, would seem to me to increase reliability and enhance salmon protection.

"Lower San Joaquin Floodplains" here and elsewhere could we draw attention to the importance of protecting migration corridors in both directions, please? It is most important for the SJ, but worth bearing in mind everywhere.

In the discussion of the San Joaquin, no mention is made of Selenium. This is a huge issue that is entirely dependent on the ecosystem in place. In particular longer residence time and more benthic feeders will inject more Se into the food web, some parts more than others. Also appropriate to bring in the discussion of Water Quality later. I believe the delta cross channel was dug in 1951 and the gates installed in 1953.

"seasonal flow patterns." Okay this is wild and crazy, but I'm going to bring it up. If you look up "seasons" in Wikipedia you will find a description of six ecological seasons for temperate zones that are unequal:

"Ecological seasons

Ecologically speaking, a season is a period of the year in which only certain types of floral and animal events happen (e.g.: flowers bloom-spring; hedgehogs hibernate-winter). So, if we can observe a change in daily floral/animal events, the season is changing.

Temperate areas

Six seasons can be distinguished. Mild temperate regions<http://en.wikipedia.org/wiki/Temperate_regions> tend to experience the beginning of the hibernal season up to a month later than cool temperate areas, while the prevernal and vernal seasons begin up to a month earlier. For example, prevernalcrocus<<http://en.wikipedia.org/wiki/Crocus>>

blooms typically appear as early as February in mild coastal areas of British Columbia, the British Isles, and western and southern Europe. The actual dates for each season vary by climate region and can shift from one year to the next. Average dates listed here are for cool

temperate climate zones in the Northern Hemisphere:

<<http://en.wikipedia.org/wiki/Crocus>>

§ Prevernal (ca.1 March-1 May)<<http://en.wikipedia.org/wiki/Crocus>>

§ Vernal (ca.1 May-15 June)<<http://en.wikipedia.org/wiki/Crocus>>

§ Estival (ca.15 June-15 August)<<http://en.wikipedia.org/wiki/Crocus>>

§ Serotinal (ca.15 August-15 September)<<http://en.wikipedia.org/wiki/Crocus>>

§ Autumnal (ca.15 September-1 November)<<http://en.wikipedia.org/wiki/Crocus>>

§ Hibernial (ca.1 November-1 March)"<<http://en.wikipedia.org/wiki/Europe>>

<<http://en.wikipedia.org/wiki/Europe>>

I think these are very pertinent to aquatic ecology of the Central Valley; they line up remarkably well with the ways different species and assemblages use the delta. I had never heard of them before, but I really think they are better descriptors than the three months each of fall, winter, spring and summer that are contorted for use here and everywhere else.<<http://en.wikipedia.org/wiki/Europe>>

In discussing hatchery fish management it concludes that they would be "excluded, by weirs, from key spawning areas." I lack the imagination or knowledge to see how this could be achieved.<<http://en.wikipedia.org/wiki/Europe>>

In discussing "changes in water releases from upstream reservoirs" it would be useful to mention FERC and DFG as agencies with a legal regulatory oversight.<<http://en.wikipedia.org/wiki/Europe>>

<<http://en.wikipedia.org/wiki/Europe>>

"natural forces, such as earthquakes and sea level rise" Have we joined the 54% of Americans who do not believe that humans have a hand in global warming? That's what it sounds like. This connection is repeated several times, to my tooth-grinding discomfort.<<http://en.wikipedia.org/wiki/Europe>>

<<http://en.wikipedia.org/wiki/Europe>>

On Mon, Jan 9, 2012 at 2:39 PM, Ellen Hanak [Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy) wrote:<<http://en.wikipedia.org/wiki/Europe>>

Dear Reconciliationistas,<<http://en.wikipedia.org/wiki/Europe>>

<<http://en.wikipedia.org/wiki/Europe>>

First: New Year's greetings to all, and best wishes for

2012.<<http://en.wikipedia.org/wiki/Europe>>

<<http://en.wikipedia.org/wiki/Europe>>

Second: Here, at last, is a draft of the reconciled Delta vision report for your review. We have done quite a bit of massaging of ideas and text resulting from the workshops held this past summer and early fall, and hope it now hangs together as a coherent and digestible whole.<<http://en.wikipedia.org/wiki/Europe>>

<[mailto:Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy)>

Next step: [Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy)

(1) We are hoping you all can read it and provide feedback by MONDAY, JANUARY 23RD. [Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy)

(2) After additional clean-up, we will send it out for external review, hopefully the following week. [Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy)

(3) Following revisions in response to reviewers, it will get professionally edited and beautified. [Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy)

(4) Public release sometime this spring. [Ex. 6 - Personal Privacy](mailto:Ex.6-PersonalPrivacy)
<<mailto:hanak@ppic.org>>

To get this out as quickly as possible, we have opted to forgo the

glossy print option we were initially thinking of, which would have added another 8 weeks to the production process. (The draft is also about 30% too long for that format). But it will look nicer than it currently does, including much improved maps (currently just sketched - you'll see notes at the bottom of several of them indicating changes we know we need to make, you may have additional suggestions).<mailto: Ex. 6 - Personal Privacy

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You'll notice that a couple of things are promised - a new graph showing changes in tidal range with island flooding, and a new text box on a potential export water management scheme. I'll send along the graph very soon (courtesy of Bill Fleenor and RMA), and the text box when it's ready. Also, we are planning on having a technical appendix to this report that provides a brief summary of multiple stressors.

That should be ready in a few days.<mailto: Ex. 6 - Personal Privacy

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As you read, please think of ways to improve this, and also whether (as we hope) you are comfortable being listed as a co-author. If you are more comfortable just being thanked in the acknowledgements as one of the participants in discussions, that is also fine. (No need to list agency affiliation when that's not deemed appropriate, and of course we can also have a broad statement that these are the personal views of the authors, not representing their employers.) We hope as many as possible will be willing to sign on to the document, because that will strengthen the weight it may carry, but we understand if not everyone is able to.<mailto: Ex. 6 - Personal Privacy

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(We don't expect you to co-author the stressors appendix, which wasn't really part of the workshop discussions, but we'll welcome your input if you have time to read it).< Ex. 6 - Personal Privacy

<mailto: Ex. 6 - Personal Privacy

Please do not share this document with anyone outside this group; it needs to remain confidential until it is publicly released.

<mailto:h Ex. 6 - Personal Privacy

Thanks again for the time you already put into this process, and thanks in advance for your review of this draft. Please let me know if you will NOT be able to get us comments by Monday, JANUARY 23rd.

Ex. 6 - Personal Privacy

All the best,

<mailto:han Ex. 6 - Personal Privacy

Ellen

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Bruce Herbold
San Francisco

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